

cont.
E1

(c) plasma annealing said layer of metal nitride.

48. (Twice Amended) A method of forming a barrier layer over a conductive surface surrounded by a channel having inner walls extending above said conductive surface, said method including the steps of:

(a) depositing a layer of a refractory metal on said conductive surface and said inner walls of said channel to a thickness in a range of about 25 to 100 Å;

(b) depositing a layer of a metal nitride on said layer of said refractory metal; and

(c) plasma annealing said layer of said metal nitride, wherein said layer of said metal nitride has a thickness extending from said layer of said refractory metal of less than 130 Å after completing said step (b).